

29/5, K/16 (Item 13 from file: 350)
DIALOG(R) File 350: Derwent WPI X
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0009354600 - Drawing available
WPI ACC NO: 1999-287698/ 199927
XRPX Acc No: N1999-214878

Micro-graphic device for anti-forgery protection of e.g. bank notes and credit cards

Patent Assignee: COMMONWEALTH SCI & IND RES ORG (CSI R); KIMM M C (KIMM-I)
; LEE R A (LEER-I); QUINT G L (QUIN-I)

Inventor: LEE R; LEE R A; QUINT G L; KIMM M C

Patent Family (8 patents, 81 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 1999017941	A1	19990415	WO 1998AU821	A	19980930	199927 B
AU 199893315	A	19990427	AU 199893315	A	19980930	199936 E
EP 1023187	A1	20000802	EP 1998946157	A	19980930	200038 E
			WO 1998AU821	A	19980930	
AU 732931	B	20010503	AU 199893315	A	19980930	200129 E
EP 1023187	B1	20070307	EP 1998946157	A	19980930	200720 E
			WO 1998AU821	A	19980930	
DE 69837275	E	20070419	DE 69837275	A	19980930	200729 E
			EP 1998946157	A	19980930	
			WO 1998AU821	A	19980930	
DE 69837275	T2	20071115	DE 69837275	A	19980930	200777 E
			EP 1998946157	A	19980930	
			WO 1998AU821	A	19980930	
US 20080088124	A1	20080417	WO 1998AU821	A	19980930	200829 E
			US 2000509649	A	20000330	
			US 2007691761	A	20070327	

Priority Applications (no., kind, date): AU 19979572 A 19971002

Alerting Abstract WO A1

NOVELTY - A micro-graphic device (1) has a **surface relief** structure (2) with regions (3) which include grey scale regions (4) too small to be separately resolved by the human eye. Each region is one of a limited number of different grey scale region structure types appearing to have different intensities when illuminated by a light source (5) and viewed by an observer (6) because of their different scattering characteristics.

DESCRIPTI ON - An independent claim is included for a valuable document incorporating micro-graphic device.

USE - Anti-forgery protection of bank-notes, credit **cards**, cheques, share certificates etc.

ADVANTAGE - Improves **security** of items.

DESCRIPTI ON OF DRAWINGS - The drawing is a schematic diagram illustrating operation of the invention

- 1 Micro-graphic device
- 2 **Surface relief** structure
- 3 Regions
- 4 Grey scale regions
- 5 Light source
- 6 Observer

Title Terms/Index Terms/Additional Words: MICRO; GRAPHIC; DEVICE; ANTI;
FORGE; PROTECT; BANK; NOTE; CREDIT; **CARD**

Class Codes

International Classification (+ Attributes)
IPC + Level Value Position Status Version

ECLA: B41M 003/14, B42D 015/10
ICO: L41M 003/14T, L42D 035/22
US Classification, Current Main: 283-072000
US Classification, Issued: 28372

File Segment: EngPI; EPI;
DWPI Class: T04; V07; P76; P78
Manual Codes (EPI/S-X): T04-C02; T04-D07B1; V07-F02C

29/5, K/18 (Item 15 from file: 350)
DIALOG(R) File 350: Derwent WPI X
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0008284448 - Drawing available
WPI ACC NO: 1997-393846/ 199736
XRPX Acc No: N1997-327722

Surface pattern for value bearing papers, bonds and packaging foils - has at least two surface portions with relief structures formed by superimposition of four gratings respectively

Patent Assignee: ELECTROWATT TECHNOLOGY INNOVATION AG (ELEC-N); LANDIS & GYR TECHNOLOGY INNOVATION AG (LANI); OVD KINEGRAM AG (OVDK-N)

Inventor: STAUB R; TOMPKIN W R

Patent Family (7 patents, 67 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 1997027504	A1	19970731	WO 1996EP2599	A	19960617	199736 B
AU 199663559	A	19970820	AU 199663559	A	19960617	199749 E
EP 876629	A1	19981111	EP 1996922815	A	19960617	199849 E
			WO 1996EP2599	A	19960617	
US 5969863	A	19991019	WO 1996EP2599	A	19960617	199950 E
			US 1998117305	A	19980903	
EP 876629	B1	20020814	EP 1996922815	A	19960617	200255 E
			WO 1996EP2599	A	19960617	
DE 69623044	E	20020919	DE 69623044	A	19960617	200269 E
			EP 1996922815	A	19960617	
			WO 1996EP2599	A	19960617	
CA 2241285	C	20040817	CA 2241285	A	19960617	200455 E
			WO 1996EP2599	A	19960617	

Priority Applications (no., kind, date): CH 1996210 A 19960126

Alerting Abstract WO A1

The pattern (10) has at least two surface portions (11,12) which contain microscopically fine, light diffracting relief structures. The surface portions light up upon rotary and or tilting movement. The relief structure of the first surface portion is a grating structure which is formed by the superimposition of first and second gratings G1 and G2 respectively and that the relief structures of the second surface portion is a grating G3 or a further grating structure which is formed by the superimposition of a third grating G3 and a fourth grating G4.

The furrows of the grating G1 and the furrows of the grating G2 include an azimuth angle, that the grating G3 is identical to the grating G1 and the grating G4 is identical to the grating G2. The furrows of the grating G3 and the furrows of the grating G4 include another azimuth angle.

ADVANTAGE - Has conspicuous patterns of optical grating structures, which is difficult to forge.

Title Terms/Index Terms/Additional Words: SURFACE ; PATTERN; VALUE; BEARING; PAPER; BOND; PACKAGE; FOIL; TWO; PORTION; RELIEF ; STRUCTURE; FORMING; SUPERIMPOSED; FOUR; GRATING; RESPECTIVE

Class Codes

International Classification (Main): G02B-005/18

International Classification (+ Attributes)

IPC + Level Value Position Status Version

G02B-0005/18 A I R 20060101

G02B-0005/18 C I R 20060101

ECLA: G02B-005/18E

US Classification, Issued: 359567, 359572, 359576, 3592, 283902

29/ 5, K/ 26 (Item 23 from file: 350)
DI ALCOG(R) File 350: Derwent WPI X
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0005005052 - Drawing available

WPI ACC NO: 1989-257152/ 198936

Document security grid structure preventing forgery - uses several partial surfaces providing different diffraction characteristics

Patent Assignee: LGZ LANDIS & GYR ZUG AG (LANI)

Inventor: ANTES G SAXER C

Patent Family (6 patents, 9 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
EP 330738	A	19890906	EP 1988119062	A	19881117	198936 B
AU 198930841	A	19890907				198944 E
US 4984824	A	19910115	US 1989311596	A	19890215	199106 E
EP 330738	B	19911113	EP 1988119062	A	19881117	199146 E
DE 3866230	G	19911219				199201 E
CA 1336779	C	19950822	CA 591661	A	19890221	199540 E

Priority Applications (no., kind, date): CH 1988805 A 19880303

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing	Notes
EP 330738	A	DE	7	5		
Regional Designated States, Original:					AT CH DE FR GB LI	
EP 330738	B	EN				
Regional Designated States, Original:					AT CH DE FR GB LI	
CA 1336779	C	EN				

Alerting Abstract EP A

The grid structure (7) is sandwiched between a protective base layer (5) and an optical coating (4) and comprises a number of partial surfaces (8,9,10) each defined by a microscopic relief structure (12), which exhibit different optical diffraction effects upon visual examination.

The microscopic relief structure (12) has more than 10 lines per mm and at least one group (8,9) of the partial surfaces (8,9,10) have a max. width of 0.3 mm. This group (8,9) pref. define a specific geometric shape or an alphanumeric figure.

ADVANTAGE - Large number of different partial surfaces makes forgery of document very difficult.

Equivalent Alerting Abstract US A

The structure, which serves as a security element comprises surface portions with predetermined relief structures having spatial frequencies of over 10 lines/mm. Each surface portion is different from directly adjoining surface portions and at least some of the surface portions have a maximum dimension of less than 0.3 mm.

To the naked eye, the pattern of surface portions on the document appears as a mesh of dots and lines. However, to an examiner with a magnifying device, the dots and lines appear as numbers, characters or other graphic features.

USE - A document with an embossed macroscopic structure and acting through optical diffraction. @6pp@

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DI ALCOG(R) File 350: Derwent WPI X
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0000629699

WPI ACC NO: 1974-32959V/ **197418**

Printing separate holograms on two sides of tape - hologram axes inclined to plane of object and reference beams, with transparent vinyl tape

Patent Assignee: RCA CORP (RADC)

Inventor: FRATTAROLA J R; HANNAN W J

Patent Family (6 patents, 6 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
DE 2350109	A	19740425	DE 2350109	A	19731005	197418 B
NL 197313692	A	19740417				197418 E
FR 2203535	A	19740614				197429 E
US 3882207	A	19750506	US 1973407545	A	19731018	197520 E
CA 992775	A	19760713				197631 E
GB 1448095	A	19760902				197636 E

Priority Applications (no., kind, date): US 1972296861 A 19721012; US 1973407545 A 19731018

Patent Details

Number	Kind	Lang	Pg	Dwg	Filing	Notes
CA 992775	A	EN				

Alerting Abstract DE A

An information recording medium of transparent sheet has separate **relief** patterns on its opposite faces, at least one of these patterns being a **hologram**. Pref. one of the **relief** patterns comprises an inclined, eccentric **hologram** formed by an object beam and a reference beam which define a plane at an **inclined angle** to the longitudinal axis of the **hologram**. Alternatively, each of the separate **relief** patterns comprises an inclined, eccentric **hologram** formed by an object and a **relief** beam defining a plane which is inclined relative to the longitudinal axis; when a monochromatic reading beam shines through the sheet these two opposed **relief** patterns provide reconstructed pictures which are phase-displaced. The sheet is pref. of a casting vinyl, having an elongation.

Title Terms/Index Terms/Additional Words: PRINT; SEPARATE; **HOLOGRAM**; TWO; SIDE; TAPE; AXIS; INCLINE; PLANE; OBJECT; REFERENCE; BEAM; TRANSPARENT; VINYL

Class Codes

(Additional/Secondary): B29C-017/00, B29D-011/00, B29D-017/00, G02B-027/00, G03B-035/00, G03C-009/08, G11B-007/00
ECLA: B29C-059/04, G03H-001/02, H04N-005/76
US Classification, Issued: 2641.3, 2641.6, 2642.7, 264284, 3593, 35912, 359900

26/5/11 (Item 11 from file: 348)
DIALOG (R) File 348: EUROPEAN PATENTS
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00511126

SECURITY DEVICE AND AUTHENTICABLE ITEM
SICHERHEITSEINRICHTUNG UND BEGLAUBIGUNGSAUSSTATTUNG
DISPOSITIF DE SECURITE ET OBJET POUVANT ETRE AUTHENTIFIÉ
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PATENT (CC, No, Kind, Date): EP 558574 A1 930908 (Basic)
EP 558574 B1 961016
WO 9209444 920611

APPLICATION (CC, No, Date): EP 91920404 911122; WO 91GB2069 911122

PRIORITY (CC, No, Date): GB 9025390 901122

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GR; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS (V7): B42D-015/00; B42D-015/10;

CITED PATENTS (WO A): EP 105099 A; GB 2093404 A; FR 2515396 A

CLAIMS EP 558574 B1

1. An authenticated item (3) carrying a number of optically diffracting areas characterised in that under white light illumination the optically diffracting areas generate a number of symbols (4A-4C; 6A-6C) identifiable to the naked eye, there being at least two sets of at least three symbols, wherein all the symbols within a set are substantially identical, and are positioned in a non-overlapping, regular geometric arrangement, and wherein the appearance of the symbols (4A-4C; 6A-6C) varies due to the variation in diffractive performance of the diffracting areas on viewing the diffracting areas at different inclination viewing angles in a manner to enable the item to be authenticated, and wherein the symbols within a set exhibit substantially the same optical appearance at at least one common viewing angle of inclination.
2. An item according to claim 1, wherein the symbols (4A-4C) in a set vary regularly in their relative orientations.
3. An item according to claim 1 or claim 2, wherein the symbols (9-11) in a set vary regularly in their relative sizes.
4. An item according to claim 3, wherein the symbols (9-11) making up a set are arranged in a line with the sizes of successive symbols decreasing regularly along the line.
5. An item according to any of the preceding claims, wherein the symbols (4A-4C) in a set exhibit substantially the same optical performance at regularly spaced relative angles of rotation.
6. An item according to any of the preceding claims, wherein the symbols (4A-4C) of one set are different from the symbols (6A-6C) of the other set.
7. An item according to any of the preceding claims, wherein one symbol is common to both sets.
8. An item according to any of the preceding claims, wherein the item generates at least six symbols (4A-4C; 6A-6C).
9. An item according to any of the preceding claims, wherein the symbols (4A-4C; 6A-6C) in a set are substantially equally spaced apart.
10. An item according to any of the preceding claims, wherein the symbols (4A-4C; 6A-6C) are identifiable to the unassisted naked eye.
11. An item according to any of the preceding claims, wherein the symbols (6A-6C) of one set are interleaved with the symbols (4A-4C) of the other set.
12. An item according to any of the preceding claims, wherein the symbols (4A-4C; 6A-6C) of the sets are juxtaposed so as to define a number of composite symbols.
13. An item according to claim 12, wherein one of the symbols (6A-6C) comprises a closed contour which is positioned around at least one symbol (4A-4C) of one or more other sets of symbols.

14. An item according to claim 12 or claim 13, wherein the symbols (4A, 6A; 4B, 6B; 4C, 6C) making up the composite symbol exhibit differently varying optical performances as the viewing angle of inclination varies.
15. An item according to any of the preceding claims, wherein each symbol of one set overlaps at most one symbol of the other set.
16. An item according to any of the preceding claims, wherein the symbols of the two sets exhibit mutually opposed variations in optical performance as the viewing angle of inclination varies.
17. An item according to any of the preceding claims, wherein the symbols (4A- 4C; 6A-6C) are presented against a background image (5).
18. An item according to claim 17, wherein the background image (5) is diffracting.
19. An item according to any of the preceding claims, wherein at least some of the symbols present the appearance of a pair of two dimensional images (34,36) which move relative to one another as the viewing angle of inclination varies.
20. An item according to any of the preceding claims, wherein at least some of the symbols present a three-dimensional object (40) in the form of an object **hologram**.
21. An authenticated item according to any of the preceding claims, wherein the item comprises a **security** document.
22. An item according to claim 21, wherein the **security** document is a banknote.
23. A **security** device for mounting to an article to be authenticated, the device comprising an authenticated item according to any of the preceding claims; and means for mounting the device to an article.
24. A device according to claim 23, wherein the mounting means comprises heat or pressure sensitive adhesive to enable the device to be fixed to a **surface** of the article.
25. A device according to claim 23 or claim 24, wherein the device is such that it can be mounted on a flexible planar surface.

00782156

Reflecting type optical system
Optisches System mit reflektierenden Flächen
Système optique du type réfléchissant

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PATENT (CC, No, Kind, Date): EP 730169 A2 960904 (Basic)
EP 730169 A3 980422
EP 730169 B1 020123

APPLICATION (CC, No, Date): EP 96102915 960227;

PRIORITY (CC, No, Date): JP 9565109 950228; JP 95123238 950424 CLAIMS EP 730169
A2

1. An optical system of reflecting type, comprising an optical element composed of a transparent body having an entrance surface, an exit surface and at least three curved reflecting surfaces of internal reflection, wherein a light beam coming from an object and entering at the entrance surface is reflected from at least one of the reflecting surfaces to form a primary image within said optical element and is, then, made to exit from the exit surface through the remaining reflecting surfaces to form an object image on a predetermined plane, and wherein 70% or more of the length of a reference axis in said optical element lies in one plane.
2. An optical system of reflecting type according to claim 1, wherein a stop is located adjacent to the entrance surface of said optical element.
3. An optical system of reflecting type according to claim 2, wherein the first curved reflecting surface of said optical element, when counted from an object side, has a converging action.
4. An optical system of reflecting type according to claim 3, wherein said first curved reflecting surface is formed to an ellipsoid of revolution.
5. An optical system of reflecting type according to claim 4, wherein the shape of said first curved reflecting surface is expressed by using a local coordinate system (x, y, z) for said first curved reflecting surface and making coefficients representing the shape of a base zone of said first curved reflecting surface be denoted by a, b and t, and wherein, putting (Formula omitted) (Formula omitted) and defining (Formula omitted) the following conditions are satisfied: (Formula omitted) (Formula omitted) (Formula omitted) (Formula omitted) where (theta) is an angle of

inclination of said first curved reflecting surface with respect to the reference axis and **d** is the distance between the **center** of said stop and said first **curved** reflecting surface as measured along the reference axis.